

A paper read by Robert Cory, M.A., M.D., to the members of the Association, at the Charing Cross Hospital Medical School, 20th June, 1885.

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Vaccination Officers' Association.

A PAPER

READ BY

ROBERT CORY, M.A., M.D.,

TO THE

MEMBERS OF THE ASSOCIATION,

At the Charing Cross Hospital Medical School,

20th June, 1885.

Published by the Vaccination Officers' Association.

registration of deaths, statistics are difficult to obtain, and we are indebted to the discriminating zeal of individual observations for such as we possess.

Amongst such an exceedingly interesting record of the death rate in Kilmarnoch, from the year 1728 until the year 1764 exists* which may be taken as fairly representing the condition of an ordinary country town during the pre-vaccination period.

Now on examining the prevalence of various causes of death spread over this term of 36 years, we find that of the total number of 3,860 deaths no less than 622 were from Small Pox alone. Consider, gentlemen, for a moment, the meaning of such figures, the number of deaths recorded in London from all causes for the year 1880 was 81,128 ; now in order to equal the proportion of the death rate from Small Pox alone before the practice of vaccination as shown by the Kilmarnoch figures, we must reckon no less than 15,487 to the account of that dreadful disease, instead of 472 the actual number which occurred, in other words anti-vaccinators would raise the deaths for one year in London by $15,487 - 472 = 15,015$, besides an increase in the poor rates to meet the expense of sheltering and providing for at least as many more, who by reckoning would be disfigured or blinded by Small Pox, although not destroyed. It may be said to you that these figures are exceptional, but they are only exceptional in the care with which they have been compiled, and the long period through which they extend.

We have another shorter record which tells the same tale.

* Extracts from an Inquiry into the Prevalence of Small Pox in Kilmarnock. By John C. McVail, M.D. Published in the Supplement of Fourteenth Annual Report of Local Government Board.

I refer to Chester for the year 1774.* This it is true was a slightly epidemic year. It shews that out of the total 546 deaths, 202 were the result of Small Pox. A proportion equal to 111,363 deaths in London in 1880. Now this fearful mortality did not fall equally upon the whole population.

Of the 622 deaths from Small Pox recorded in Kilmarnock 609 were of children under 10 years of age, and in Chester not one of the 202 who succumbed to that disease was above 10 years old.

That is, the mortality was almost entirely confined to those not able to beget others; I mention this because it in part explains an objection often raised with considerable force by the anti-vaccinators, namely that since the practice of Vaccination the fatality of Small Pox has increased, the fact is indisputable, the records I have quoted from Chester give the number attacked in 1774 as 1,385, of whom 202 or 14·5 per cent. died, whilst between the years 1831 and 1851, the computation of Mr. Marson gives 35·5 per cent. as the death rate amongst the unvaccinated attacked, and last year Dr. Gayton's calculation shows that rate to have risen to 43·7 per cent.

The discrepancy between Marston's statistics and Gayton's is really not so large as it appears, for Marston's 35·5 per cent. was arrived at when the rule at the Small Pox Hospital excluded those under 6 years, whereas the rule in Dr. Gayton's time was not enforced.

Now remember the mortality amongst the children to which I called your attention, few survived at all except

* Epidemicological Society Trans. New Series. Vol. iii., Page 151.

those who had constitutionally a certain power of resistance to the disease.

Remember also that parents very largely impart constitutional peculiarities to their children, and you will see that by degrees there would grow up a population in some degree hereditarily protected by the survival of the fittest, since none but the constitutionally strong would survive to propagate their kind; and amongst such a population naturally the disease would be less fatal than amongst us, since owing to Vaccination weak as well as strong survive and beget children. Another fact will present itself to the mind of every medical man in corroboration of what I say, and that is that when a disease first attacks a people hitherto free from its ravages, it is usually far more fatal than it is during subsequent attacks. I may mention Syphilis as it occurred in the middle ages, and Measles in the Figi Island in 1875, an account of which appears in the Epidemiological Transactions for 1883-4, Page 76. It is true that Mr. Corney takes a different view of the outbreak and believes that it was due more to ineffective treatment than to the severity of the disease, but I am at liberty to put my own interpretation upon an event which unquestionably happened.

But death from Small Pox is not its only penalty.

Many a life that it spares, it darkens with the most pitiable calamity that can befall us. The frequency with which blindness follows an attack of Small Pox may be gathered by a glance at the following table prepared from the valuable observations of Dr. Brailey.

TABLE showing the Number who lost their Eyes by reason of Small Pox out of a total of 763 Cases, who lost them from all causes, applying for relief at Moorfields Hospital, July 1877 to November 1882.

No. in Guy's Hospital Register.	Patients' Initials.	Age.	Date of Vaccination	Date of Small Pox attack.	Period between Vaccination and Small Pox attack.	Eye Lost.	Date of Excision.	
944	A. N.	4	Infancy.	1882.	4 years.	R.	Oct. 1882.	Was attempted to be Vaccinated, but it only produced a pus- [tule.
741	K. E.	13	?	1880.	13 years.			Stated to have been Vaccinated, but has no scars.
748	M. K.	16	?	1880.		R.		No marks, but holds Certificate.
606	I. B. R.	21	Infancy.	1877.	15 years.	L.	June 1881.	One faint mark.
239	I. P.	21	No statement.			R.		
498	S. M.	22	Infancy.	1878.	17 years.	L.		Two good marks.
222	J. W.	24	Infancy.	1877.	18 years.	R.	July 1878.	One imperfect mark.
58	J. F.	38	Infancy.	1876.	31 years.	R.	July 1877.	Marks good.
841	E. T.	62	Infancy.	1819.	Day or two.	R.	April 1882.	Vaccinated during incubatory period of Small Pox.
798	S. A.	8	N. V.	1831.	N. V.	L.	Feb. 1882.	
46	M. D.	12	N. V.	1866.	N. V.	L.	Nov. 1878.	
•	E. C.	18	N. V.	1862.	N. V.			Eyes lost.
89	I. B.	24	N. V.	1874.	N. V.	R.	Mar. 1880.	
03	A. T.	29	N. V.	1869.	N. V.	L.		
12	I. W.	30	N. V.	1851.	N. V.	R.		
68	J. T.	37	N. V.	1853.	N. V.	R.		

The Table deals with 763 persons who required the removal of one eye that was diseased to save the other, and who applied at Moorfields Hospital.

One of the causes requiring this severe operation was Small Pox, and the table gives particulars of all such. On viewing it, it will be seen that persons who lose their sight from Small Pox are to the extent of 43·7 per cent. unvaccinated, moreover we can gather from the rest that Vaccination has been very imperfectly performed, for in two instances only are the marks recorded as good. The number of scars is not however recorded. In the others the scars are too few and indistinct, and it is to be observed that no instance is recorded where blindness from Small Pox has resulted after a second Vaccination; indeed the table is instructive in a great many points. We may draw the lesson, how careful we should be that the child has taken well before we give the certificate as cases 748, 944 clearly show us. That is we see clearly 2 cases which lost an eye each from the carelessness or ignorance of the medical man who signed the certificate.

Another fact I wish you fully to appreciate is the extremely rare occurrence among persons who have not had Small Pox of insusceptibility to Vaccination, although according to the returns insusceptibility would appear to be common enough. *The returns of the Local Government Board for the Metropolitan Unions give 320 insusceptible cases in the year 1882, and I venture to say that of the children thus certified as insusceptible 319 at least are not. These therefore are in consequence all liable to Small Pox should they

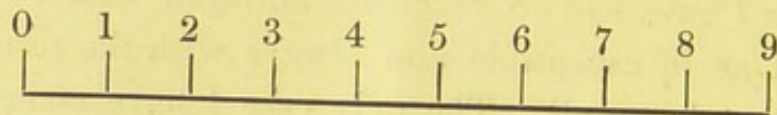
* Fourteenth Annual Report of the Local Government Board. Page 4.

fall in its way. Let me detail one instance out of many that has happened within my own experience, as it is instructive and I cannot too highly praise the Vaccination Officer concerned. The case in question was a child of a near relative who is the Vicar of a country parish. A medical man returned the child as insusceptible. The Vaccination Officer hereupon called upon my relative and told him that insusceptibility was very rare, and that he had better have the child again vaccinated. My relative in this dilemma wrote to me, and I duly vaccinated the child in five places, all of which took extremely well; on several other occasions I have had to vaccinate children who had been returned as insusceptible and always with the result that they have taken well. The only case I have come across with a different result was a little girl about 10 years old. The story was she had several times been vaccinated but never successfully; upon examination she had no scar in the usual situation, and though I vaccinated her on two occasions at an interval of 7 days, and each time in five places from another child's arm, I failed to procure any results. Hereupon seeing that my colleague Dr. Pearse had also recently vaccinated her without success, I desisted for a while from further Vaccination, but I did not give a certificate of insusceptibility. This is the only case I have met with out of more than 20,000 displaying any approach to insusceptibility, and I am confident that if the child had been brought to me again after the lapse of a year as I directed should be done, I should in the end have succeeded in Vaccinating her.

If medical men could only realize the very serious risk of Small Pox incurred by any child which remains unvac-

inated in London, I am sure cases of insusceptibility would be few and far between.

Another point I would press upon your notice is the immense superiority of good Vaccination. Almost any Vaccination, even bad Vaccination, will for a while give immunity from Small Pox attacks. But the protection afforded by a really efficient Vaccination will last very much longer than that which is got by what I may call bad or perfunctory Vaccination. Let me show you exactly what I mean by means of a simple line divided into 9 parts.



The zero end of the line will represent a person unvaccinated; 4, his condition when immunity from Small Pox is reached after Vaccination; 9, his condition when fully vaccinated; bad vaccination will place him between 4 and 9. To whichever position he has attained, there will always be a tendency to return in some cases slowly, in some quickly to the unprotected state, and therefore the more efficient the vaccination the longer the interval before the position 4 is reached in this retrograde march. Now whether we are vaccinated in one place or more we are all protected for a certain interval from Small Pox, but those who have the larger number of places are protected for the longer interval, so that Statistics ought to and do show that people who have been vaccinated in one place only, as evidenced by one scar, will suffer more from Small Pox than those which have been vaccinated in a larger number of places.

Statistics have been collected chiefly by Mr. Marson and Dr. Gayton, bearing on this point, and the following is their result.

	Highgate. Marson. 1831 to 1854.		Homerton. Gayton. 1871-85.		Per cent. of Total Deaths.
	Cases.	Deaths.	Cases.	Deaths.	
Unvaccinated	2,654	996	2,169	948	40·31
Vaccinated having 0 cicatrix	290	74	1,295	352	26·87
Vaccinated having 1 cicatrix	1,357	125	1,988	220	10·31
Vaccinated having 2 cicatrices	888	53	2,225	178	7·42
Vaccinated having 3 cicatrices	274	10	1,573	82	4·98
Vaccinated having 4 or more	268	3	1,153	37	2·81

Thus we see the death rate among the vaccinated having Small Pox gradually diminishes inversely as the number of the scars. The greatest difference being between those having no scar and those having one, and the least difference between those having three scars and those having four or more.

Further I would say a few words upon the ailments that occur in infants before Vaccination, and the eruption that may follow after, as they have their practical application to you in the matter of the certificate of postponement of Vaccination. It is not every child that is born with a skin able to withstand the commonplace skin irritations incidental to infant life. I mean for instance the irritation of a wet napkin. In many infants local irritation of this sort is sufficient to produce intertigno or redness about the buttocks. Such infants are likewise liable to cracks or sores behind the ears, and these cracks or sores are due to the perspiration of

the head trickling down and lodging on the first ledge that it meets, and that ledge is formed by the attachment of the ears to the head. Neglect to wipe or wash away the perspiration thus lodged behind the ears, gives rise in irritable skinned children to these cracks or sores in this situation. Again infants possessing irritable skins are liable to sore upper-lips owing to continued nose running, such as occurs with a head cold, similarly these infants are liable to eruptions about the body during teething, and as a result of stomach or bowel irritation so common in early life, and which occurs also though less frequently in adults, as for instance the nettlerash to which some persons are prone after partaking of various sorts of shell fish.

Now Vaccination is unquestionably a cutaneous irritant, which exerts its influence chiefly about the 10th day after Vaccination, and this is the especial day upon which these eruptions commonly appear. The post vaccinal eruptions of infants may be a general nettle rash, it may be a lichen or gum rash. It may be an eczema. In point of fact the skin responds to the irritation set up by the Vaccination according to its individual peculiarity. With certain infants different skin irritants will produce a like skin eruption. For instance I have seen a severe eruption after Vaccination which occurred again after lapse of several months during teething. Now I wish you to understand when a child showing evidence of an irritable skin is vaccinated, we have reason for believing the protection against Small Pox is not as completely given, as when the skin is healthy and that is the reason why, except in epidemics of Small Pox, the certificate of postponement is given.



